

AMENDMENT TO THE DRAWINGS

Please replace the figures currently on file with the new figures attached hereto.
The new figures include new figure 8, as required by the Examiner. No new matter is being added.

REMARKS

Claims 1, 5, 6 and 8-11 are pending. Claims 1 and 10 are the only independent claims.

In the Office Action, the Examiner objected to the drawings as failing to show (a) “a plurality of first devices, each of which is equipped with an optical transmitter each transmitter transmitting signals of a differing wavelength”, (b) “a plurality of second devices, each of which is equipped with an optical receiver that receives optical signals that are transmitted from said optical transmitters” and (c) “each receiver receiving optical signals of a different wavelength.”

A new drawings (Fig. 8) is being submitted herewith to show the above features (a) and (b). However, as to feature (c), it is not necessary to show in the figures every characteristic of a recited element. It is enough to show the element and describe its various characteristics in the specification. In this case, it is enough that the specification describe that each receiver (the receiver being shown) receives optical signals of a different wavelength.

Claims 1,6 and 10 were rejected under 35 U.S.C. 103(a) over Laine (US Patent No. 6,252,690) in view of Scifres (US Patent No. 6,414,774). Claim 5 was rejected under 35 U.S.C. 103(a) over Laine in view of Scifres (US Patent No. 6,414,774) and further in view of Heflinger (US Patent No. 5,726,786). Claims 8, 9 and 11 were rejected under 35 U.S.C. 103(a) over Laine in view of Scifres and further in view of Ohhata et al. (US Patent No. 6,304,357). Claims 1, 5, 6 and 10 were rejected under 35 U.S.C. 103(a) over Heflinger (US Patent No. 5,726,786) in view of Scifres. Claims 8, 9 and 11 were rejected under 35 U.S.C. 103(a) over Heflinger in view of Scifres and further in view of Ohhata et al.

Applicant traverses and submits that independent claims 1 and 10 are patentable for at least the following reasons.

Claim 1 is directed to an optical data bus communication system of an artificial satellite. The system comprises: a plurality of first devices, each of which is equipped with an optical transmitter each transmitter transmitting signals of a differing wavelength; a reflection means that is provided on the entire inner surface of, or at prescribed locations inside, the case of the artificial satellite; and a plurality of second devices, each of which is equipped with an optical receiver that receives optical signals that are transmitted from the optical transmitters both directly and after reflection and diffusing by the reflection means, each receiver receiving optical signals of a different wavelength and reproducing the optical signals from these received signals.

In the Office Action, it was conceded that Laine does not teach the feature by which each transmitter transmits signals of a different wavelength, and each receiver receives optical signals of a different wavelength. The Office Action relied upon Scifres to supply this feature.

Laine is directed to a satellite onboard data transmission system using senders and receivers interconnected by non-directional infra-red links. In the Background section of Laine, it is explained how laser based technologies for use in a satellite are highly disadvantageous due to highly directional nature and the requirement of precise adjustment of the senders/receivers made necessary by this feature of lasers. Thus, not only is Laine directed to the use of non-directional infra-red links, and not lasers, but it teaches away from the use of lasers. See col. 2, lines 1-28.

Scifres is directed to a laser diode wireless network. In one embodiment, the infrared carrier wavelengths of the lasers transmitted by different terminals can be mutually exclusive. See col. 2, lines 27-30. In another disclosed embodiment, the terminals can be time multiplexed, rather than wavelength diverse.

The combination of Laine and Scifres is improper at least because Laine, as mentioned above, teaches away from the use of lasers. Thus, one of ordinary skill in the art would have been dissuaded from looking to Scifres, which is directed to the particular problems of lasers, for any teaching with which to modify Laine. For at least this reason, no prima facie case of obviousness is made out with regard to claim 1. Claim 10 recites a similar feature and is believed patentable for substantially similar reasons.

As to the second combination of references used against the independent claims, it was conceded in the Office Action that Heflinger does not teach the feature of claim 1 by which each transmitter transmits signals of a different wavelength, and each receiver receives optical signals of a different wavelength. In the Office Action, the position was taken that it would have been obvious to modify Heflinger based on certain teachings in Scifres so as to meet this limitation. Applicants disagree.

Heflinger is directed to a free-space passively star-coupled data bus in which each of plural transceivers simultaneously communicates data to the remaining transceivers using uniform distributed light which is preferably collimated. Only one of the transmitters operates to transmit at any one time. More than one receiver simultaneously receives transmitted data. Col. 8, lines 46 through col. 9, line 24. Addressing is done based upon a protocol, the use of this protocol permits the appropriate receiver to receive the data intended for that receiver.

Heflinger uses an eye-safe wavelength for all transmissions. It is clear from the above that Heflinger uses *a particular wavelength*, chosen with safety in mind, for *all* such broadcast communication and relies upon a *protocol* for addressing.

Scifres is directed to a laser diode wireless network. As discussed above, in one embodiment, the infrared carrier wavelengths of the lasers transmitted by different terminals can be mutually exclusive. See col. 2, lines 27-30. However, in another disclosed embodiment, the terminals can be time multiplexed, rather than wavelength diverse.

There would be no motivation to modify Heflinger, and to change its principle of operation, by changing it from a system that uses one frequency together with a protocol, to a system that uses mutually exclusive, and diverse, wavelengths. This is particularly true in view of the fact that Scifres itself teaches that one way to implement its system is with a single wavelength using time-multiplexing. Thus, Scifres provides no motivation to change Heflinger to use diverse wavelengths, when it teaches that the use of one wavelength, with time multiplexing, works just as well.

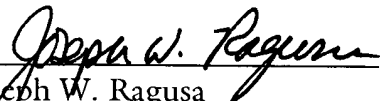
For at least the above reasons, no prima facie case of obviousness has been set forth with regard to claim 1. Claim 10 is a corresponding method claim that recites similar features and is believed patentable for similar reasons.

The other claims in this application are each dependent from one or the other of the independent claims discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

In view of the foregoing remarks, Applicant respectfully requests favorable reconsideration and passage to issuance of the present application.

Dated: September 26, 2006

Respectfully submitted,

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